APPENDIX I

Datasheet

GLINT Delta breaks the 3D geometry bottleneck by offloading 3D geometry pipeline processing into a hardwired 100 MFLOP processor. Designed as a companion processor to 3Dlabs' GLINT and PERMEDIA chips, GLINT Delta typically doubles a system's 3D performance by reducing CPU loading by up to 70% and halving the PCI bandwidth required.

GLINT Delta performs the slope and setup in high precision floating point for any 3Dlabs rendering device, including as GLINT 300SX, and PERMEDIA. The setup calculations are general purpose and may be used to accelerate any 3D API, including OpenGL, Direct3D, AutoDesk's Heidi and Apple's QuickDraw 3D.

By performing high precision high precision floating point to fixed point conversion, GLINT Delta allows the software geometry pipeline to pass vertex information in standard floating point format - avoiding time consuming data conversions which can bottleneck 3D system performance.

GLINT Delta operates as a multi-function PCI adaptor and supports multiple graphics devices on a single board, e.g. GLINT + AVGA or multiple GLINTs for scaleable rendering performance.

3D Geometry Processor Features

- Hardware and software compatible with GLINT 300SX and PERMEDIA
  - *easy design in*
- Slope and set-up parameter calculation
  - *no slope information need to be passed to the graphics sub-system, offloads work from CPU and reduces PCI load*
- High precision computation
  - *increases visual quality*
- Accepts data in floating or fixed point formats
  - *avoids time consuming data conversions*
- Vertex cache to re-use parameters
  - *minimizes data transfers and enables efficient mesh processing*
- Operates as multi-function PCI adaptor
  - *multiple graphics devices on one board, e.g. GLINT 300SX + onboard VGA or multiple*

GLINTs for increased rendering speed
- PCI Master capability with full DMA support
  - fast PCI transfer of commands and data
- Big-endian processor support
  - Apple PowerMac compatible with no glue required
- Texture normalize operation
  - for maximum texture mapping accuracy
- Data broadcast capability
  - efficient communication with multiple GLINTs
- Hardware handshake with GLINT 300SX or PERMEDIA
  - reduced contention on secondary PCI bus
- Full access to the 8514A extended registers on AVGA devices
  - complete compatibility with existing AVGA device drivers

Technical Overview

A Complete Solution

GLINT Delta continues 3Dlabs' award winning family of graphics processors. All our devices offer customers a total solution, combining hardware acceleration with unequaled software support and design-in assistance.

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